

XXVI. *On the Lamellicorn Beetles which possess exerted Mandibles and Labrum, and 10-jointed Antennæ.* By J. O. WESTWOOD, F.L.S., &c.

[Read 3rd October, 1842, and completed 4th May, 1843.]

THE insects which form the subject of this paper, and which possess an exerted labrum, exposed mandibles and 10-jointed antennæ, form portions of the families *Trogidæ* and *Geotrupidæ* of MacLeay.

The former of these families, in the “*Horæ Entomologicæ*,” is distinguished from the other Saprothagous families as follows:— From the *Scarabæidæ* and *Aphodiidæ* by its exposed mandibles and labrum; from the *Dynastidæ* by its “*maxillæ processubus duobus, interno dente arcuato corneo sæpius instructo; labrum distinctum subquadratum et anus obvolutus;*” and from the *Geotrupidæ* by its corneous maxillæ.

The antennæ of the *Trogidæ* are described as “*breves, novem vel decem articulis,*” (p. 59,) in order to admit of the introduction of the Australian genera *Cryptodus* and *Mæchidius*, (the first of which, as I have shown in previous papers read before the Entomological Society, belongs to the Phileurideous *Dynastidæ*, whilst *Mæchidius*, as also shown by me in another paper, belongs to the *Melolonthidæ*,) as well as of the very interesting European genus *Ægialia*, which, in addition to its 9-jointed antennæ, possesses a strong corneous hooked inner lobe to the maxillæ, with the outer lobe spinulo-setose.*

This last named curious genus, therefore, justifies the admission of 9-jointed antennæ into the characters of the family of the *Trogidæ* of MacLeay, namely, the genera *Trox*, *Phoberus*, and *Acanthocerus*, possessing 10-jointed antennæ. All these genera, however, possess a character in respect to these organs by which they are distinguished by Mr. MacLeay from the *Geotrupidæ*, (with which they agree in their exerted mandibles and labrum,) namely, the separation of the three joints of the club of the antennæ, whereas in the *Geotrupidæ* the two terminal joints are received into the cup-like basal joint of the club. The majority of the genera of *Geotrupidæ* possess 11-jointed antennæ; Mr. MacLeay however adds to the family the genera *Orphnus* and *Hybosorus*, which possess 10-jointed

* The insect figured by Guérin as the type of this genus, in the “*Iconographie du Règne Animal*,” *Æg. cornifrons*, possesses 10-jointed antennæ, and forms the genus *Geobius*, Brullé (*Hybalus*).

antennæ. Mr. MacLeay's description of the maxillæ of *Orphnus* is however incorrect, since in this respect, as well as in the free joints of the club of its antennæ, it belongs to the *Trogidæ*.

In the "Règne Animal" Latreille united the *Geotrupidæ* and *Trogidæ* into his section *Arenicoli*, distinguished from the *Coprophi* (*Scarabæidæ* and *Aphodidæ*, MacLeay) by the exerted mandibles and labrum, and the distinct terminal point of the labial palpi; and from the *Xylophili* (*Dynastidæ* and *Rutelidæ*) by the elytra covering the extremity of the abdomen and the exposed labrum, &c. He however divides the *Arenicoli* into two groups, *Geotrupides* and *Trogides*, which do not however precisely agree with MacLeay's two families; the *Geotrupides* being characterized by having the two lobes of the labium distinct and exerted, and the antennæ generally 11-jointed; whilst the *Trogides* are described as having 10-jointed antennæ, the labium entirely concealed beneath the mentum, and the maxillæ dentated on the inner edge. I have not however found Latreille's primary character of these two groups of so much importance as he gives to them; because, as the lobes of the labium are membranous and retractile, they shrink in drying, and thus often become concealed when they would be exerted while living; moreover they are often exerted but hidden beneath the scapes of the labial palpi.

Latreille divides his *Geotrupides* into three sub-sections.

1. Those with 9-jointed antennæ; namely, the genera *Ægialia* (which has been already noticed above as more strictly referable to the *Trogidæ* on account of its maxillæ and distinct joints of the club of the antennæ) and *Chiron*, MacLeay—a most interesting genus placed by its founder in the family *Lucanidæ*, but which Latreille, with greater acumen, introduces near to *Ægialia*. Mr. MacLeay, indeed, admits that he did not examine the maxillæ of this genus; but the strongly exerted dentate labrum and minute scutellum are sufficient to create suspicion of its Lucanideous relationship, whilst the maxillæ are very similar to those of *Orphnus* and *Ochodæus*.

2. Those with 11-jointed antennæ, including *Lethrus*, *Geotrupes*, *Athyreus*, *Elephastonus*, *Bolboceras*. To these Latreille adds *Ochodæus*; but that genus, although various recent French authors have described it as having 11-jointed antennæ (apparently from Latreille having introduced it into this group rather than *ex visu proprio*), in reality possesses ten joints to its antennæ, and, as above mentioned, is very close in its relationship to *Orphnus*.

3. Those with 10-jointed antennæ, namely, *Hybosorus* and

Acanthocerus; the first of which has a Geotrupideous and the second a Trogideous clava to its antennæ, the first also has Geotrupideous and the latter rather Trogideous maxillæ and labium.

The *Trogides* consist, according to Latreille, of the genus *Trox* alone, with *Phoberus* as a subdivision.*

The genus *Orphnus*, which MacLeay places in the family *Geotrupidæ*, is introduced by Latreille into the *Dynastidæ*, and is stated not to differ from *Oryctes*. This relationship will be examined in a subsequent part of this paper.

With these preliminary remarks on the relationship of these insects, I now proceed to the description of the various genera which possess 10-jointed antennæ, and which respectively belong to the families *Geotrupidæ* or *Trogidæ* as thus characterized.

GEOTRUPIDÆ.

TROIDÆ.

<i>Antennarum clava</i> .. articulo basali infundibuliformi ..	—	articulis liberis.
<i>Maxillarum lobis</i> .. membranaceis ..	—	potius corneis, supero ciliato-dentato.
<i>Labii lobis</i> ..	plerumque porrectis ..	— plerumque retractis.

GEOTRUPIDÆ.

Antennarum clava articulo basali infundibuliformi; maxillarum lobi membranacei; labium lobis plerumque porrectis.

Antennæ 11-articulatæ *Geotrupes*, &c.

Antennæ 10-articulatæ.

Prothorax integer.

Tibiæ anticæ 3-dentatæ.

Mandibulæ uncinatæ *Hybosorus*.

Mandibulæ latiores.

Ungues bifidi.

Tibiæ posticæ in medio inermes *Silphodes*.

Tibiæ posticæ in medio dentatæ *Coilodes*.

Ungues simplices *Chætodus*.

Tibiæ anticæ 2-dentatæ *Apalonychus*.

Prothorax canaliculatus *Anaides*.

TROIDÆ.

Antennarum clava articulis liberis; maxillarum lobi cornei, externo ciliato-dentato; labium lobis plerumque retractis.

Antennæ 9-articulatæ.

Corpus breve latum *Ægialia*.

Corpus longum parallelum *Chiron*.

* *Cryptodus* and *Mæchidius* are however mentioned in a note, not having been seen by Latreille; he however considers them as removed from *Trox*, and regards *Mæchidius* as allied to *Melolonthus*.

Antennæ 10-articulatæ.

Corpus supra planum; mentum profundè incisum .. *Cryptogenius*.

Corpus plus minusve convexum; mentum haud profundè incisum.

Caput sub pectus haud contractile; corpus haud globosum.

Pedes mediocres, tarsis gracilibus.

Prothorax maximus, anticè subbituberculatus .. *Geobius*.

Prothorax mediocris, haud anticè subbituberculatus.

Prothorax anticè plus minusve retusus, dorso irregulari; caput sæpius cornutum in ♂; maxillarum lobus internus denticulatus.

Mandibulis 4-dentatis *Triodontus*.

Mandibulis 3-dentatis *Orphnus*.

Mandibulis 2-dentatis *Ægidium*.

Prothorax et caput simplicia; maxillarum lobus internus in spinam curvatam } *Ochodæus*.
productus.....

Pedes abbreviati, tarsis crassis *Trox*, *Phoberus*.

Caput sub pectus contractile; corpus globosum .. *Acanthocerus*; and the subgenera separated from it by Germar, in *Zeitschrift f. d. Ent.*

Fam. GEOTRUPIDÆ.

HYBOSORUS, MacLeay.

(Plate XI. fig. 1 and details.)

This genus is at once distinguished by its sickle-shaped mandibles, a remarkable character, which neither MacLeay nor Guérin have represented in their figures illustrative of this genus. The labrum is entirely exposed and has its sides serrated, another peculiar character not noticed by MacLeay, whose description of the inner lobe of the maxillæ ("lacina interna subcrustacea intus ad apicem unidentata") is also incorrect, as I have, on repeated dissection, observed both lobes to be equally membranous and destitute of teeth. The labial palpi arise from large scapes, which MacLeay has mistaken for the anterior margin of the mentum; and instead of the ligula or labium being, as he says, "vix distincta," its two lobes are porrected beyond the basal joint of the palpi. Guérin also has neither represented the scapes to the labial palpi nor the lobes of the labium. The unguis are simple in all the feet.

The species are confined to the old world.

Sp. 1. *Hybosorus arator*, Fabr., MacL. (*oblongus*, Dahl.)

Habitat Europa Australi (Hispania, Gall. mer.)

Long. corp. lin. 4.

Note: *H. arator*, Lap. Hist. Nat. Ins. Col. vol. ii. p. 108,

Senegallia; long. 3 lin.: Obscurè brunneus, tibiis anticis bidentatis. Species distincta?

Sp. 2. *Hybosorus latipes*, Germar, Perty, Ind.?

Sp. 3. *Hybosorus orientalis*, Hope, MSS.

Niger, nitidus, clypeo punctatissimo marginato, thorace tenue punctato, elytris striato-punctatis, tibiis anticis 3-dentatis.

Long. corp. lin. 6.

Habitat in India orientali.

Sp. 4. *Hybosorus Roei*.

Individua minora Indica, ex India orientali D. Roe missa ad Dom. Hope; elytra et thoracem colore piceo tincta, lineasque 4 long. habent. Vix tamen species distincta.

Sp. 5. *Hybosorus Laportei*.

Syn. *H. arator*, Lap. op. cit. supra.

Habitat Senegallia.

Sp. 6? *Hybosorus nitidulus*, Duf. Coll.? Lap. op. cit. p. 108.

“Brun rougeâtre, elytres *irrégulièrement* ponctuées sur le disque, jambes antérieures fortement 3-dentées.”

Long. lin. 3, larg. $1\frac{1}{4}$.

Habitat Senegallia.

Obs.—Dejean gives this MS. species of Dufour as an *Orphnus*.

Sp. 7. *Hybosorus thoracicus*, Hope, MSS.

Oblongo-ovalis, piceo-rufus, thorace rufo; nitidus, capite thoraceque sublente tenue punctatis, elytris striato-punctatis, antennis luteis, tibiis anticis bidentatis.

Long. corp. lin. $3\frac{1}{2}$.

Habitat in Senegallia.

Mus. Hope, Melly.

Obs.—Color variat plus minusve piceus. Individua alia, nomine *H. oblongus* inscripta, in Mus. D. Melly vidi, sed haud distincta.

Sp. 8. *Hybosorus pinguis*, Westw.

Lator, piceo-niger, elytris nigris, clypeo punctato, thorace sublævi, elytris striato-punctatis, pedibus piceis, brunneo-setosis, antennis fulvis, tibiis anticis 3-dentatis.

Long. corp. lin. 3, 4.

Habitat in Sierra Leone.

Mus. Hope, Melly. Alius duplo minor ex Africa in Mus. Melly haud differre videtur.

SILPHODES, Westw.

(Plate XI. fig. 2 and details.)

Corpus ovatum, subconvexum, marginibus reflexis et setosis. *Caput* subtrigonum, margine laterali parum reflexo et ante oculos longè setoso. *Clypeus* fere rectè truncatus. *Labrum* porrectum, breve transversum, angulis anticis rotundatis, margineque antico in medio emarginato. *Mandibulæ* robustæ corneæ, exsertæ, margine externo valde rotundato et setoso, apice in dentem declivem producto, denteque altero minuto interno; margine interno setuloso. *Maxillæ* basi corneæ, extus setoso; lobo apicali magno membranaceo setoso, interno minuto ciliato, ciliis duabus crassioribus apicalibus. *Palpi* maxillares 4-articulati; articulo 1mo minuto, reliquis tribus longioribus, ultimo longo, parum curvato. *Mentum* fere rotundatum, longè setosum, margine antico emarginato. *Labium* laciniis duabus tenuibus productis. *Palpi* labiales breves, 3-articulati. *Antennæ* 10-articulatæ, clava 3-articulatæ; articulis infundibuliformibus, 1mo majori alteros duos recipiente. *Prothorax* transversus, posticè latior, anticè emarginatus, angulis posticis rotundatis, margine postico parum producto; lateribus reflexo-marginatis. *Scutellum* triangulare. *Elytra* ovalia, abdomen omnino tegentia, convexa, margine reflexo et ciliato. *Pedes* longitudine mediocres, tarsis posticis longioribus. *Tibiæ* 2 anticæ extus obtusè serratæ, dentibus tribus majoribus ad apicem et calcari unico armatæ. *Tibiæ* 4 posticæ angustiores, setis longissimis triplici serie positis. *Tarsi* 5-articulati; antichi breves, articulo ultimo subtus spinulis armati. *Ungues* pedum anticorum dissimiles, majori intus ad basin spina brevi alteraque versus medium armato; minori fere recto, basi tamen valde curvato. *Ungues* pedum 4 posticorum fere similes, fere recti, ad basin tamen curvati.

The porrected labrum and mandibles, membranous lobes of the maxillæ and infundibuliform joints of the club of the antennæ, lead me to infer that this insect is much more nearly allied to the *Geotrupidæ* than to the *Trogidæ*, from which these characters especially remove it.* Its immediate relationship is *Hybosorus*, from which it is distinguished by the form of the mandibles, and

* A specimen of this genus, in the Cabinet of the Zoological Society, has a label attached to it in the handwriting of Mr. MacLeay, inscribed "*Trogidæ*, G. N." Had Mr. MacLeay however had an opportunity of examining the trophi of the genus, I am convinced he would have referred it to *Geotrupidæ*.

more especially by the dissimilarity in the form of the unguis, which is indeed a character which we meet with only amongst the *Melolonthidæ* and other Thalerophagous groups.

The genus bears a striking analogy to some of the species of the genera *Silpha* (*S. lævigata*) and *Necrophilus* (*N. hydrophiloides*, Esch.), not only in size but also in general appearance. This is the more interesting, because, from a label in the handwriting of Sir S. Raffles, attached to a specimen from Sumatra, (in the Zoological Society's Museum,) we learn that the species "feeds on dead animal matter. May, 1818." The construction of the trophi would certainly not have led to the idea of such a habit, the peculiar form of the mandibles and the membranous lobes of the maxillæ not appearing fit for such a mode of life.

The genus is probably confined to the sea coast, like *Ægialia* and the *Psammodii*.

Sp. 1. *Silphodes Indica*, Westw.

S. castaneo-fusca, lateribus rufescentibus, elytris striato-punctatis, mediocriter setoso-marginatis, tibiis anticis extus (et inter dentes) serratis, tarsis anticis simplicibus.

Long. corp. lin. $5\frac{1}{3}$.

Habitat in India Orientali.

In Mus. D. Melly.

Magnitudine quasi intermedia inter *S. Sumatrensem* et *Philippinensem*, illâ e tertia parte major, et magis glabrâ, hâc minor et angustior. Caput lateribus parum elevatis, clypeo ferrugineo punctato. Prothorax marginatus, tenuissimè punctatus, punctis lateralibus majoribus. Elytra regulariter striato-punctata, punctis haud profundis. Tibiæ anticæ extus (et inter dentes) serratæ. Tarsi antici et unguis simplices: an ♀?

Sp. 2. *Silphodes Madagascariensis*, Westw.

Piceo-castanea, lateribus pedibusque magis rufescentibus, capite anticè latiori, elytris minus ovatis, punctatis, punctis majoribus striisque tribus lævibus punctis utrinque marginatis, lateribus longius setosis.

Long. corp. lin. $5\frac{3}{4}$.

Habitat Madagascar.

In Mus. D. Melly.

Magnitudo fere *S. Gambiensis* at angustior, elytris et pedibus longius setosis, capite anticè magis quadrato, pone antennas magis rotundato, elytrorum punctis profundioribus striisque tribus lævi-

bus, singula striæ utrinque linea punctorum marginata. Tibiæ anticæ externè (et inter dentes) serratæ, unguibus (σ ?) basi valde curvatis equalibus, uno dente in medio armato.

Sp. 3. *Silphodes dubia*, W.

Nigricans, lateribus vix setosis, prothorace lævi, elytris sub lente irregulariter punctatis, lineis tribus lævibus in singulo punctis utrinque marginatis, tibiis anticis externè (et inter dentes) serratis.

Long. corp. lin. $4\frac{1}{2}$.

Habitat — ?

In Mus. D. Hope.

S. Sumatrensi paulo major, et magis convexa; elytris, oculo nudo, lævibus, sed sub lente tenuissimè et irregulariter punctatis, striis tribus lævibus in singulo, stria singula utrinque punctis marginatâ. Tarsi antici et ungues simplices.

Sp. 4. *Silphodes Sumatrensis*, W.

S. piceo-castanea, capite latiori, elytris striato-punctatis, margine longe setoso, tibiis anticis extus serratis, inter dentes integris.

Long. corp. lin. $3\frac{1}{2}$.

Habitat in Sumatra. D. Raffles.

In Mus. Soc. Zool. Lond.

Hæc species e cæteris differt statura minori, prothoracis lateribus magis parallelis, capite et parte antica prothoracis latioribus, elytrisque magis convexis. Caput tenuissimè punctatum, inter oculos læve. Prothorax magis nitidus convexior punctatissimus, lateribus punctis majoribus marginatis. Elytra marginata ovalia convexa, minus dilatata, singulo striis circiter 18 equalibus e punctis impressis formatis. Setæ marginis elytrorum elongatæ. Pedes longiores et tenuiores. Tibiæ anticæ extus serratæ, spatiis inter dentes haud serratis.

It is this species which was observed by Sir S. Raffles to "feed on dead animal matter."

Mr. Hope has a specimen of this genus, which differs only from Sir S. Raffles' individual in being slightly larger, in being rather paler in colour, and in the striæ of the elytra not being quite so regularly or so deeply punctured; received with the erroneous name *Euparia castanea*, No. 83.

Sp. 5. *Silphodes Philippinensis*, W. (Pl. XI. fig. 2.)

S. piceo-castanea, capite thoraceque magis rufescentibus, elytris irregulariter valde punctatis striaque suturali alterisque 8

longitudinalibus (per paria dispositis) e punctis confluentibus formatis.

Long. corp. lin. $4\frac{1}{2}$ —6.

Habitat in insulis Philippinensibus. D. Cuming.

E præcedenti differt statura majori latiori, minus convexa, capite et parte antica prothoracis angustioribus, angulisque posticis hujus minus marginatis. Caput et prothorax tenuissimè punctata, hujus lateribus punctis majoribus. Setæ marginis elytrorum et pedum elongatæ. Tibiæ anticæ extus serratæ, spatiis inter dentes apicales etiam serratis.

Sp. 6. *Silphodes Gambiensis*, Westw.

S. castaneo-fuscus, prothoracis et elytrorum marginibus suturaque rufescentibus, elytris sub lente tenuissimè punctatis, striisque tribus e punctis majoribus in singulo. Long. corp. lin. 6.

Habitat apud ripos fluviorum Gambiæ et Senegalliæ. D. Tebbs. In Mus. Britann.

E *S. Philippinensi* differt capite angustiori, thorace minus punctato, elytris magis ovatis, setis marginalibus multo brevioribus, punctis disci irregularibus et minutis, lineis tribus in singulo e punctis majoribus formatis; ungues pedum anticorum æquales, parum curvati, uno in medio dentato.

Obs.—There is a genus indicated in Dejean's catalogue, between *Hybosorus* and *Ochodæus*, under the name of *Acallus*, (*Atimus*, Dej. Cat. 3rd edit.) composed of three species; *emarginatus*, Wiedemann [Wiedemann has described no species under such name], from Java, *affinis*, Dej., and *ciliatus*, Dej., both from Senegal. This genus is evidently identical with *Phæochrus* of Laporte, (Hist. Nat. Ins. Col. vol. ii. p. 108,) placed between *Geobius* and *Acanthocerus*, and composed of two species, *P. Senegallensis* and *P. emarginatus* (from Java). From the very short and slovenly description given of this genus, it is impossible to say whether it be identical with *Silphodes* or not.

COILODES, Westw. (κοιλότης, convexitas).

(Pl. XI. fig. 3, and details.)

Corpus breve, valde convexum, posticè rotundatum. Antennæ 10-articulatæ, clava rotundata, articulo 8vo magno infundibuliformi. Labrum porrectum, transversum, angulis anticis rotundatis, margine antico setoso, setis e punctorum serie productis. Mandibulæ elongato-trigonæ, extus curvatæ, apice

acutæ, margine interno emarginato setoso, basi internè inciso. *Maxillæ* lobis membranaceis setosis. *Mentum* quadratum, lateribus rotundis. *Palpi* labiales breves, 3-articulati, in scapso crassos insidentes. *Labium* lobis duobus membranaceis ad basin articuli 2di palporum labialium productis. *Tibiæ* anticæ extus serratæ et 3-dentatæ. *Pronotum* in ♂ anticè excavatum, in ♀ vero integrum. *Ungues* tarsorum in ♂ intus in medio unidentati, in ♀ simplices. (Insecta Americana.)

The above characters will sufficiently characterize a small group of South American insects closely allied to and apparently representing the old world *Hybosori*, with which, in various respects, it is true that they structurally agree; but the form of the mandibles, and the sexual differences exhibited by the prothorax and unguis, will, I think, sufficiently distinguish them from that group. The type of the present genus is—

Sp. 1. *Hybosorus gibbus*, Perty, (Mart. and Spix, Del. An. Art. Bras. pl. 9, fig. 5).
(Pl. XI. fig. 3.)

Syn. *Hyb. Brasiliensis*, Laporte, H. d. Ins. Col. ii. p. 108.
Hyb. geminatus, Dej. Cat. ined.

Brevis, convexus, supra niger, nitidus; elytris marginatis, sub lente geminato-punctato-striatis; thorace ♂ anticè rotundato excavato, margine antico in medio tuberculo instructo; capitis fronte carina media transversa seu potius tuberculis duobus conjunctis, transversè positis.

Long. corp. lin. 3.

Habitat in Brasilia. In Mus. Hope, Melly, nostr.

Variat mas colore omnino luteo-fulvus. Habitat in Brasilia. Mus. Melly.

Sp. 2. *Coilodes Chilensis*, W.

C. piceus, thorace maris rufo-piceo, excavatione magna antica, margineque antico in medio tuberculo prominenti.

Long. corp. lin. $3\frac{1}{2}$.

Habitat in Chili.

In Mus. Soc. Ent. Lond.

Præcedenti paullo major, magis piceus vel rufo-piceus, thorace magis impresso in parte magis antica. Aliter simillimus.

Sp. 3. *Coilodes castaneus*, W.

C. piceo-castaneus, nitidus, thorace maris parum excavato, elytris vix geminato-striato-punctatis, pedibus brunneis.

Long. corp. $2\frac{3}{4}$. *C. gibbo* valde affinis.

Habitat in Colombia.

In Mus. D. Melly (*Hybosorus castaneus*, Buq. MSS.)

Sp. 4. *Coilodes parvulus*, W.

C. luteo-brunneus, nitidus, elytris profundius geminato-striato-punctatis ♀.

Long. corp. lin. $2\frac{1}{8}$.

Habitat in Brasilia. In Mus. Melly.

Species 4 præcedentes forsitan varietates sp. ejusdem existimari debent.

From their geographical habitat I presume the following species belong to this genus:—

Hybosorus rufulus, Laporte, op. cit. p. 108.

Habitat in Insula St. Doming.

Hybosorus humeralis, Mann.

Habitat in Brasilia.

Hybosorus auger, Mann.

Habitat in Brasilia.

Hybosorus discus, Dej. Cat. ined.

Habitat Buenos Ayres, Brasilia.

Hybosorus granarius, Dej. Cat. ined.

Habitat in Brasilia.

Hybosorus testaceus, Dej. Cat. ined.

Habitat in Carthagera.

Hybosorus minutus, Buq., Dej. Cat. 3rd edit. ined.

Habitat Cayenne.

CHETODUS, Westw.

(Pl. XI. fig. 4, and details.)

Corpus oblongo-ovatum convexum, superficie setosa. *Caput* parvum, anticè triangulare, clypei apice rotundato. *Labrum* porrectum, latior quam longus, margine antico recto, angulis rotundatis. *Mandibulæ* conicæ crassæ subtrigonæ, extus rotundatæ, apice curvato et intus oblique truncato, membranaque setosa interna instructæ. *Maxillæ* lobo externo subovato membranaceo setoso, interno minuto subcorneo, apice stylis duobus brevibus instructo. *Palpi* maxillares subbreves, articulo 1mo brevissimo, 2ndo crasso, 3tio parum

breviori, tertio longiori attenuato. *Mentum* cordatum, basi truncatum. *Palpi* labiales minuti, scapo basali haud conspicuo. *Labium* e lobis duobus sub palpos conspicuis constans. *Antennæ* 10 articulatae, clava rotunda, articulo 8vo infundibuliformi. *Pronotum* integrum, posticè fere latitudine elytrorum. *Elytra* magna convexa, striata et setosa. *Tibiæ* anticae 3-dentatae, posticae 4 in medio haud dentatae. *Ungues* simplices. (Insecta Americæ meridionali propria.)

Sp. 1. *Chætodus piceus*, Westw. (Pl. XI. fig. 4.)

C. piceus, nitidus, capite thoraceque rudè punctatis, elytris regulariter striatis, luteo-setosis, pedibus valde setosis, antennarum clava lutea.

Long. corp. lin. 3.

Habitat in Brasilia, D. Swainson.

In Mus. Soc. Zool. Lond.

Caput clypeo rotundato, tenue marginato, hoc et pronotum vagè et rudè punctatis, lateribus marginatis et setulosis. *Elytra* striata, singulo striis 12 simplicibus æque distantibus et setosis. *Pedes* mediocres, tibiis anticis serrulatis, apice tridentatis.

Sp. 2. *Chætodus irregularis*, Westw. (Plate XI. fig. 4f.)

C. piceus, nitidus, capite thoraceque grossè punctatis, elytris irregulariter striatis, antennarum clava obscuriore.

Long. corp. 2½.

Habitat in Brasilia. In Mus. D. Melly.

Clypeus rufescens, tenue marginatus punctatus. *Pronotum* irregulariter et grossè punctatum, lateribus subserratis et setosis. *Elytra* striata, striis simplicibus, singulo striis 10; 1ma suturali, 2da et 5tia, 4a et 5tia approximatis, reliquis externis æque distantibus, punctis perpaucis ad margines striarum intermediarum. *Pedes* mediocres, tibiis anticis 3-dentatis.

The mandibles in this species have the outside near the base more gibbous, and the apex not so obliquely truncate within; the antennæ have the intermediate joints acutely produced within, the points being directed backwards; the maxillæ and mentum agree with those of the preceding species, but the lobes of the labium are more porrected.

Sp. 3. *Chætodus? basalis*, Westw.

C.? piceus, nitidus, elytris basi rufis, punctato-striatis, pedibus elongatis gracilibus.

Long. corp. lin. 2.

Habitat in Cayenna. In Mus. D. Melly.

Caput deest. Thorax tenue punctatus. Elytra striato-punctata, singulo circiter seriebus 12 punctorum impressorum, lateralibus magis irregularibus. Pedes longi graciles, tibiis anticis externè subserratis, apice 3-dentatis, dente interno minuto, tibiis intermediis et posticis in medio haud dentatis setosis, tarsis elongatis gracilibus, unguibus curvatis integris.

ANAIDES, *Westw.*

(Pl. XI. fig. 6, and details.)

Corpus supra planum, rugosum, setosum; thorace in medio longitudinaliter carinato, parte antica angustiore. *Caput* mediocre, subovale, anticè angustius, marginibus clypei parum elevatis, rugosis. *Labrum* exsertum, transversum, anticè margine setoso. *Mandibulæ* elongatæ, versus apicem curvatæ, acutæ, edentatæ, margine interno membrana instructo. *Maxillæ* elongatæ, lobo apicali longo setoso, edentato, apice parum latiori; lobo interno longo, gracili parum setoso, apice supero in dentem parvum corneum terminato. *Palpi maxillares* longitudine mediocres, articulo 1mo minuto, 2do et 3tio subæqualibus, 4to longiori elongato-ovali. *Mentum* oblongum, lateribus parum extus arcuatis, longè ciliatum. *Labium* e lobis duobus membranaceis distinctis, ponè palpos porrectis, constans. *Palpi labiales* breves, 3-articulati, articulo 3tio parum longiori. *Antennæ* 10-articulatæ, 1mo curvato, apice vix crassiori setoso, 3bus ultimis distinctis, clavam formantibus, 8vo majori. *Prothorax* transversus, lateribus arcuatis, antice angustior, (capite tamen latior,) et posticè elytrorum basi parum angustior, angulis posticis subacutis, dorso in medio longitudinaliter canaliculato. *Elytra* thorace latiora, pone humeros parum dilatata, podicem occultantia, lineâ elevatâ in utroque, ex angulo humerali fere ad apicem, et cum latere parallela, ductâ. *Pedes* longitudine mediocres. *Tibiæ* extus serratæ, intus setosæ, anticæ dentibus tribus extus versus apicem armatæ. *Tarsi* et ungues simplices.

This is a singular genus, which seems to partake of the characters of the *Trogidæ* and *Geotrupidæ* almost in an equal degree. In general appearance it has almost the appearance of a small *Trox*, but is more flattened on the back, which is increased by the two lateral carinæ of the elytra. The antennæ are also 10-jointed, whereas they are 11-jointed in the majority of the *Geotrupidæ*. The labium has its two lobes exposed beyond the extremity of the mentum.

The mandibles are destitute of the cavity filled with membrane on the inside as in *Trox*, the membrane in fact being present, but extending along the inside of the jaws. The maxillæ also more nearly resemble those of *Geotrupes* than *Trox*. The toothing of the tibiæ is quite unlike either *Trox* or *Geotrupes*, and resembles *Cryptogenius*, with which it also agrees in various other respects; as the structure of the mandibles, the lateral carinæ of the elytra, colour, texture, sculpture, geographical distribution, &c.

Anaides fossulatus, Westw. (Pl. XI. fig. 6.)

Nigro-fuscus, subnitidus, punctulatus, setosus; antennarum clava pallidiori, prothorace in medio fossula longitudinali.

Long. corp. lin. $3\frac{1}{2}$.

Habitat in America meridionali. In Mus. D. Hope.

Caput subtriangulare, angulo antico rotundato, marginibus serrulatis, punctatum. Prothorax variolosus setosus, setis e medio impressionum subrotundarum irregularium productis, carinis duabus longitudinalibus parallelis, spatio angusto intermedio parum excavato; lateribus subrotundatis, obtusè serrulatis. Elytra læviter striata, singulo striis 8 e punctis impressis ovalibus, connexis; et inter has strias linea fere recta, punctisque remotioribus subrotundis setigeris; inter humeros et scutellum carina parva et abbreviata, carinaque altera e humero fere ad apicem utriusque elytri extensa. Tibiæ anticæ ad apicem externè dentibus tribus acutis armatæ, reliquæ serratæ et setosæ.

Obs.—M. Guérin-Meneville possesses an undescribed insect, which appeared to me, on a casual examination, to belong to the present genus, which I learn is Dejean's Catal. genus *Adelops*.

APALONYCHUS, West., (*ἀπαλῶν ὀνύχων*).

(Pl. XI. fig. 5, and details.)

Corpus oblongo-ovatum, convexum. *Caput* mediocre, clypeo lato, anticè truncato. *Labrum* semicirculare, porrectum. *Mandibulæ* corneæ, porrectæ, extus valde curvatæ, apice oblique emarginato, intus ad basin incisæ. *Maxillæ* lobis duobus minutis, externo membranaceo integro setoso, interno minimo subcorneo, apice styliifero. *Palpi maxillares* elongati graciles. *Mentum* elongato-crateriforme, longe setosum. *Palpi* sublongi, 3-articulati, articulo ultimo longiori, in scapos duos breves latos insidentes. *Labium* inconspicuum. *Antennæ*

longiores quam in præcedentibus, 10-articulatæ, articulis tribus clavæ laxis intus elongato-productis, articulo 8vo majori, 9no curvato. *Prothorax* simplex. *Pedes* sublongi, tibiæ anticæ extus serrulatæ apiceque bidentatæ. *Tibiæ* 4 posticæ in medio inermes. *Ungues* pedum omnium in medio dente parvo acuto armati.

The type of this group completely proves the impossibility of limiting one family group in extensive tribes of insects by fixed characters, the curious structure of the antennæ, and the inner lobe of the maxillæ, materially receding from the Geotrupideous type; the arched exposed mandibles and labrum, curved mandibles, and toothed tarsal ungues, however, prove its near approximation to some of the preceding groups. The enlarged size of the first joint of the club of the antennæ appears rather Geotrupideous, whilst the concealed lobes of the labium are more Trogideous. The entire habit of the insect is, however, much more like some of the *Geotrupidæ* with 11-jointed antennæ than *Trox*.

Apalonychus Waterhousii, Westw. (Pl. XI. fig. 5.)

A. fulvo-castaneus, nitidus, lævis; antennarum clava lutea, elytris tenne et irregulariter punctato-striatis, lateribus longe setosis. Long. corp. lin. 4.

Habitat in Insula Cuba.

In Mus. D. Waterhouse; [et nunc etiam nostro, sub nomine *Trichops helvolus*. D. Erichsonio amicissime transmissus.]

Caput parte antica depressa; clypei lateribus parum marginatis. Caput et pronotum vage punctata, punctis minutis. Elytra punctatissima, punctis in strias numerosas parum regulares dispositis. Elytra et pronotum tenue marginata, pedes concolores, longe setosi. Calcaria pedum posticorum breviores.

Fam. TROGIDÆ.

CRYPTOGENIUS, Westw.

(Pl. XII. fig. 1, and details.)

Corpus supra planum, rugosum, setosum, thorace subrotundato, elytris angustiori, pedibus longis. *Caput* suborbiculatum, margine antico tuberculato, clypeo infero magno, antice truncato. *Labrum* magnum, crustaceum, transversum, angulis anticis rotundatis, medio marginis antici parum acuminato.

Hoc labrum (insecto quiescente) spatium inter clypeum et pedes anticos occupat, reliquis partibus oris omnino absconditis. *Mandibulæ* magnæ corneæ, extus curvatæ apice acutæ, margine interno tenui, tenuissime ciliato. *Maxillæ* basi corneæ, lobo apicali maximo membranaceo ciliato, lobo interno parvo membranaceo ciliato. *Palpi maxillares* breves, crassi, 4-articulati: articulo 1mo brevissimo; 2do et 3tio brevibus, crassis; 4to majori, ovato, apice attenuato. *Mentum* maximum, corneum, fere in duas partes incisione magna setosa marginis antici divisum. *Palpi labiales* breves, 3-articulati, articulis duobus basalibus brevibus, ultimo longiori-ovato. *Labium* membranaceum, e lobis duobus longissimè setosum formatum. *Antennæ* 10-articulatæ, articulo 1mo magno lato, angulo antico internè producto, articulis 3-7 sensim crassioribus. *Clava* 3-articulata, brevis, crassa, articulis distinctis. *Prothorax* fere rotundatus, supra depressus, margine antico emarginato lineaque transversa elevata cum illo proxima et parallela; lateribus tuberculatis et posticè angustatis, margineque postico in medio parum producto. *Scutellum* triangulare. *Prosternum* subacuminatum. *Elytra* thorace latiora, supra fere plana, anum tegentia, singulo seriebus 4 longitudinalibus tuberculorum costas totidem fere formantibus. *Pedes* elongati, tibiis subangustis, tuberculato-serratis; antici dentibus tribus majoribus ad apicem externè armatis. *Calcaria* pedum 4 posticorum brevissima. *Ungues* simplices. *Color* obscurus.

This most singularly formed *Lamellicorn* appears to me to be more nearly allied to the *Trogidæ* than to the *Geotrupidæ*, or any other family, although in several respects it differs from every known group. In its dull colour and tuberculated setose appearance, the large size of the exerted labrum, horny mandibles, 10-jointed antennæ, with the joints of the club free, and concealed labium, it agrees with the *Trogidæ*; but in its depressed form, concealed mouth (shutting in with the base of the fore legs), elongated feet, notched anterior tibiæ, membranous lobes of the maxillæ, mandibles not toothed and unfurnished with a membranous notch on the inner margin, and singularly formed mentum, it differs from the characters of that family. The points of agreement appear to me to be of greater value than those in which the genus differs from that family. If, on the other hand, we regard the membranous labrum and mandibles as the typical character of the *Aphodiidæ* and *Scarabæidæ*, it differs at once from those two families; whilst the distinctly free jointed clava of the 10-jointed

antennæ, depressed body, and concealed labium, remove it from the *Geotrupidæ*, with which it however agrees in several important characters, such as the membranous lobes to the maxillæ, notched fore tibiæ, horny mandibles, with the upper edge ciliated. The large exposed labrum also at once removes it from the *Dynastidæ*,

Cryptogenius Miersianus, W. (Pl. XII. fig. 1.)

Nigricans, subnitidus, luteo-setosus; capite thoraceque circulis concentricis confluentibus sculpturatis; elytris striis numerosis tenue impressis irregularibus, spatio inter strias impressionibus ovalibus confluentibus, singulo tuberculis triplici serie ordinatis, costaque elevata laterali. Long. corp. lin. $3\frac{1}{2}$.

Habitat in Nova Grenada. In Mus. D. Miers et Hope.

D. Miers, Entomologus necnon Botanicus peritissimus, copiam ditissimam insectorum Americæ meridionalis collegit, multasque species singulares mecum benevolissime communicavit.

ΓΕΘΒΙΟΥΣ, Brullé, Exped. Sci. de Morée; Laporte, in Hist. Nat. ins. Col.

(*Hybalus*, Dejean, Catalogue, *Ægialia* pars Guérin, Icon. R. An.)

(Pl. XII. fig. 2 a—2 c, and details.)

This genus possesses a strong relationship with *Ægialia*, not only in its short broad outline, but also in the dentated mandibles and structure of the maxillæ; the antennæ are, however, 10-jointed, with a short basal joint, and the head cornuted in the males. Like *Cryptogenius* it possesses free joints in the clava of the antennæ, the first of the club being however larger than either of the others;* hence, as well as from the denticulation of the mandibles and structure of the maxillæ, and but slightly exposed labial lobes, this genus must rank in the family *Trogidæ*.

The upper lip is transverse, with the front margin strongly setose, and the angles rounded off.

The mandibles have their lateral edges exposed, being thin, and dilated outwards, the right hand mandible being slightly bifid at the tip, whilst the left hand one has an acute apical tooth, and another stronger and more acute below the apex within; both have a broad bidentate tooth in the middle of the inner margin, below which is a deep notch.

The maxillæ have the upper lobe triangular, the point directed inwards over the inner lobe; its upper edge is furnished with several

* The club of the antennæ is incorrectly described by Laporte as infundibuliform.

strong curved spinulose setæ, two of which are much stronger than the others. The inner lobe is produced into a rather long bifid horny point. The maxillary palpi are of moderate length, with the terminal joint cylindric-ovate.

The mentum is somewhat oblong, and rather narrowed in front. The lobes of the labium are slightly visible behind the base of the palpi, which have the middle joint angulated beyond the middle, and strongly setose.

The anterior tibiæ are rather broad, without serrations along the margin, and with three obtuse teeth; the middle and hind tibiæ are denticulato-setose in the middle; the calcaria of the four hind feet are long, and the ungues are simple.

The male, in addition to the upright horn at the front of the head, is distinguished by having the front of the thorax rather retuse, and furnished with two small tubercles.

Sp. 1. *Geobius Dorcas*.

Copris Dorcas, Fabr.* Ent. Syst. Suppl. p. 31; Syst. Eleuth. i. p. 44; Germar in Silb. Rev. Ent. vol. iv. p. 112; Guérin, Icon. R. An. Ins. texte, p. 81 (*Ægialia Dorcas*), pl. 22, fig. 1. (*Ægialia cornifrons*.)

Ægialia cornifrons, Dejean olim.

Geobius cornifrons, Brullé, Exped. Sc. de Morée, Ins. p. 173; Laporte, Ins. Col. vol. ii. p. 108.

Hybalus cornifrons, Dej. Cat.

? *glabratus*, Pk. teste Dej. Cat.

Habitat Ital. merid., Sicilia, Corfu, (Barbaria, teste Dej.)

Sp. 2. *Geobius barbarus*, Lap. Op. cit.

G. lævicollis, Dej. Cat. sine discr.

Habitat Algeria.

TRIODONTUS, Westw.

(Pl. XII. fig. 4 a—4 c, and details.)

Corpus ovale, depressum, fere *Colymbetis* pedibus posticis subelongatis. *Caput* in mare cornu erecto medio, fœminæ inerme.

Labrum exsertum transversum, margine antico fere recto, angulis rotundatis. *Mandibulæ* lateribus detectis, 3-dentatæ, dente interno in mandibula dextera, minimo fere inconspicuo.

Maxillæ fere ut in *Geobio*, lobo supero longiori, spinulis cur-

* In the first of these works Fabricius gives Tangier as the habitat of this species, and in the latter Mauritania.

vatis brevioribus et fere æqualibus, lobo interno parvo, apice dentibus vel spinis nonnullis minutis. *Mentum* fere quadratum, anticè vero parum angustatum. *Palpi labiales* breves, in scapos duos insidentes; 3-articulati, articulo basali minuto, 2do in medio intus angulato et setoso; labii lobi sub scapos labiales distincti. *Antennæ* 10-articulatæ breves, articulo basali parvo; clava articulis liberis. *Pronotum* in ♂ retusum et subtuberculatum. *Tibiæ* anticæ breves latæ, 3-dentatæ; posticæ 4 in medio dentatæ. *Calcaria* elongata. *Ungues* simplices elongati.

These characters are derived from a small species from Madagascar, known in various collections under the name of *Orphnus Madagascariensis*, but which M. Guérin has described in his "Iconographie" under that of *O. nitidulus*. It differs, however, in several respects from *Orphnus* as well as from *Geobius*, to which it is also nearly allied.

The front of the pronotum differs in different specimens (as in most cornuted insects), in the extent of the impression in front; in some are three small central tubercles in a row at the hind part of this impression, with two lateral ones, whilst in others they are more or less obliterated. I have also seen several specimens with the front of the thorax smooth and entire, as in the female, but with a small elevated tubercle in the middle of the clypeus, as though it were the rudiment of the horn of the male.

ÆGIDIUM. (Cat. Gall. sine descr.)

(Pl. XII. fig. 5—8, and details.)

Corpus oblongo-ovatum, thorace fere elytrorum latitudine, capite in utroque sexu inermi, pronoto vero in mare valde excavato, lateribus angulato-elevatis. *Caput* transversum. *Clypeus* margine antico lato, vix sinuato. *Labrum* exsertum, latum, angulis rotundatis ciliatis. *Mandibulæ* lateribus exsertis corneæ bidentatæ, dente apicale bifido, margine interno membrana ciliata instructo. *Maxillæ* lobo apicali lato, extus rotundato, intus in angulum acutum producto, margine supero ciliis latis corneis curvatis armato; lobo interno corneo subacuto, ante apicem supra seta spiniformi instructo. *Palpi* mediocres, filiformes, articulo ultimo elongato-ovato. *Mentum* ovatum, anticè angustius. *Palpi labiales* brevissimi, in scapos insidentes. *Labium* bilobum, lobis ultra basin palporum exsertis. *Antennæ* 10-articulatæ, articulis clavæ liberis, ultimo minori. *Thorax* latior quam longus, lateribus rotundis, anticè quam posticè vix latior, in mare excavatus, in fœmina vero canali

brevi centrali tantum instructus. *Prosternum* in spinam anticè productum. *Elytra* ovalia. *Pedes* mediocres; tibiis anticis haud serratis, apice externè 3-dentatis; tibiis posticis in medio extus subdentatis, apice externo in spinam acutam productis. *Calcaria* longa. *Ungues* simplices. *Podex* depressus, elytris haud tectus. (Insecta Americana.)

Sp. 1. *Ægidium Colombianum*, Westw. (Pl. XII. fig. 7, 8.)

Æ. nigrum, capite thoraceque lævibus nitidis, elytris subpiceis carinatis et punctis ovalibus obsitis; maris pronoto tuberculo frontali et excavatione magna dorsali; fœminæ pronoto canaliculato.

Long. corp. ♂ lin. 9; ♀ lin. 7½.

Habitat in Colombia. In Mus. D. Reich, Parisiis.

Sp. 2. *Ægidium parvulus*, Bilberg. (*Æg. muticum*, Dej. Cat. ined.)
(Pl. XII. fig. 6, and details.)

Æ. angustius, nigro-piceum, obscurum, undique punctatum, elytris bicarinatis, pronoto canali dorsali subobsoleto.

Long. corp. lin. 5½.

Habitat in insula Guadeloupe. In Mus. D. Hope et Melly.

Obs.—Individuum vidi reliquis simile, nisi in margine antico pronoti tuberculo instructo, ut in maribus reliquorum; aliter simillimus.

Sp. 3. *Ægidium hædulus*, Dej. Cat. ined.

Æ. nigrum, nitidissimum, pronoto maris in medio valde depresso punctato, lateribus angulato-elevatis, tuberculoque frontali in utroque sexu armato, ♀ impressione seu canali frontali lato minime profundo; elytris magis rotundatis, punctatis, punctis in strias irregulares dispositis.

Long. corp. ♂ 5; ♀ lin. 4.

Habitat in Brasilia.

In Mus. Hope, Melly, et Soc. Ent. Lond.

Obs.—Individa pro fœmina supra descripta tuberculum habent in medio marginis antici prothoracis, articulumque 2dum palporum labialium in medio intus angulatum et setosum. Mandibulæ maris dentes habent magis acutos quam in *Æg. parvulo*, et articulos 5, 6, et 7 antennarum intus acute dentatos.

Sp. 4. *Ægidium?* *Guianense*, Westw. (Pl. XII. fig. 5a—5d.)

Æg.? breve convexum, castaneum, pronoto posticè parum angustato, mandibulis extus cornu obtuso armatis.

Long. corp. lin. $4\frac{1}{2}$.

Habitat in Guiana. D. Schomburghk. In Mus. nostr.

E reliquis differt habitu, lateribus pronoti minus rotundatis, ut et structura partium nonnullarum essentialium. Vix tamen genus distinctum format.

Clypeus anticè rotundato-productus, punctatissimus. Labrum exsertum, semicirculare, ciliatum. Mandibulæ exsertæ, versus medium lateris externi cornu brevi lato truncato armatæ, dentibus duobus, supero bifido ut in *Ægidiis* veris. Maxillæ etiam ut in illis, lobo interno vero in hamum simplicem producto. Pronotum transversum, marginibus serrulatis, et cum elytris fere continuis; in medio versus marginem anticum parum longitudinaliter impressus et punctatus, spatio postico lævi nitido et fere punctis destituto, lateribus vero punctatis. Elytra punctata; punctis in strias fere regulares (10 in singulo) dispositis. Tibiæ anticæ acute 3-dentatæ, unguibus simplicibus. Tarsi 4 postici articulo basali intus ciliis rectis numerosis instructo.

ORPHNUS, MacLeay.

(Pl. XII. fig. 9, and details.)

This is an interesting genus, which evidently forms a connecting link with such of the smaller *Dynastidæ* as have the head cornuted, and the thorax excavated in front in the males. The entire structure of the mouth, however, proves its nearer relationship with the preceding genera; and hence the opinion of Latreille (*Règne An.* iv. 549), that it is identical with *Oryctes*, cannot be adopted.

The description of the trophi given by Mr. MacLeay disagrees so completely with the numerous dissections which I have made of nearly every species, that it is necessary to give the following characters of the parts of the mouth.

Labrum exsertum, transversum, anticè emarginatum, angulis rotundatis, margine antico valde setoso. *Mandibulæ* latæ planiusculæ, extus valde curvatæ, intus dentibus 4 acutis armatæ, dente 2do majori, margine interno versus basin membrana setosa instructæ. *Maxillæ* bilobæ, lobo exteriori obrigono, angulo interno acuto, dorso longe ciliato, ciliis curvatis et spinulosis, lobo interno parvo corneo, setigero,

subtridentato, dente intermedio longiori et acuto. *Palpi maxillares* articulo ultimo oblongo ovato, margine externo tamen fere recto. *Mentum* subquadratum, lateribus parum rotundatis, margine antico in medio paullo angulato. *Palpi labiales* in scapos duos breves et latos insidentes, articulo ultimo subovato, præcedentibus majori. *Labium* e lobis duobus rotundatis membranaceis ciliatis ad apicem articuli 1mi palporum extensis formatum.

Sectio 1. Species Indicæ.

Sp. 1. *Orphnus bicolor*, Fab. MacLeay.

Long. corp. lin. $3\frac{1}{2}$.

Sp. 2. *Orphnus Mysoriensis*, Westw.

O. brunneus seu nigro-piceus, tuberculo elevato in medio marginis postici prothoracis, elytris irregulariter punctatis.

Long. corp. ♂ lin. 5; ♀ lin. $4\frac{1}{3}$.

Habitat in Ind. Orient., Mysore.

In Mus. D. Hope.

Clypeus in mare cornu erecto, fere recto armatus, capite posticè punctulato. Prothorax glaberrimus, excavatione media profunda fere ad marginem posticum extensa, ubi desinit in tuberculo elevato, lateribus conico-elevatis, et acutis, versus caput parum prominentibus. Elytra subbrevia, valde convexa, punctatissima, punctis irregularibus striaque suturali. Tibiæ anticæ dentibus 3us magnis et acutis armatæ. Tarsi simplices. Fœmina differt capite thoraceque inermibus.

Sp. 3. *Orphnus picinus*, Westw.

O. piceo-niger, nitidus, capite ♂ cornu erecto, prothoraceque excavatione magna media, margine postico marginato, elytris striis irregularibus parum impressis.

Long. corp. ♂ lin. $4\frac{1}{2}$; ♀ lin. 4.

Habitat in Ind. Orient., Bombay.

In Mus. D. Melly et nostr.

Præcedenti parum minor, angustior et minus convexus. Prothorax ♂ excavatione magna ovali media punctata, fere ad marginem posticum thoracis extensa, tuberculo minuto versus marginem anticum, lateribus excavationis conico-elevatis, apicè obtuso, lateribusque versus caput fere rectis. Elytra striis nonnullis irregularibus impressis et vage punctatis.

Fœmina differt capite inermi prothoraceque integro, nisi excavatione minuta versus medium marginis antici.

Sp. 4. *Orphnus impressus*, Westw.

O. piceus vel rufo-piceus, capite posticè in ♀ tuberculo parvo armato, pronotoque anticè excavatione triangulari instructo ♀.

Long. corp. lin. $3\frac{1}{2}$ —4.

Habitat in India Orientali centrali.

In Mus. D. Hearsay et Soc. Ent. Lond.

O. Mysoriensi ♀ valde affinis, differt tamen statura minori, prothoraceque anticè impresso margineque postico in medio parum elevato et disco versus marginem posticum interdum longitudinaliter tenuissimè canaliculato.

♂ ? (vel ♂ *O. bicoloris* ?) Niger, nitidus, vage punctatus, elytris irregulariter striatis, pedibus castaneis, clypeo cornu brevi erecto, pronotoque anticè semicirculariter excavato, excavatione vix ultra medium pronoti extensa, lateribus excavationis posticè vix elevatis.

Long. corp. lin. $3\frac{1}{4}$.

Habitat in Ind. Orient. centrali.

In Mus. D. Hearsay.

Idem vidi cum nomine "Africa" pro patria designatum—an recte?

Sp. 5. *Orphnus nanus*, Westw.

O. niger aut castaneus, nitidus, oblongus, capite ♂ cornu brevi erecto et pronoto semicirculariter excavato, excavatione haud ultra medium pronoti extensa lateribusque vix elevatis et in tuberculo terminatis, capite pronotoque vage punctatis, elytrisque irregulariter striatis punctisque majoribus in strias rudas dispositis.

Long. corp. lin. $2\frac{3}{4}$.

Habitat in India Orientali.

In Mus. D. Hearsay.

O. impresso valde affinis, præsertim in maribus; differt tamen magnitudine minori (multa enim vidi ejusdem magnitudinis). Fœmina etiam differt pronoto anticè magis retuso, clypeoque tuberculo elevato instructo.

Sectio 2. Species Africanæ.

Sp. 6. *Orphnus Meleagris*, (Dej. Cat. sine descr.)

(Plate XII. fig. 9, and details.)

Latus, castaneo-fulvus; elytris stria suturali punctisque irregularibus, capite cornu elevato conico frontali pronotoque valde excavato, lateribus conico-elevatis, versus caput subrotundatis.

Long. corp. lin. 5.

Habitat in Senegallia.

In Mus. D. Hope.

Species reliquis latior; fulvo-castaneus, nitidus, tenue punctatus; antennarum articuli 6 et 7 setam longam emittunt; pronoti excavatio subtriangularis, profunda, tenue punctata, fere ad marginem posticum extensa, lateribus excavationis in medio conico-elevatis, at versus caput parum rotundatis, margine postico pronoti haud tuberculato. Tibiæ anticæ latæ, fortiter tridentatæ, dente interno fere ad basin tibiæ posito. Tarsi antichi articulo basali brevissimo, articulis latis, ultimo ovato.

Fœminam simillimam at paullo obscurionem, capite et pronoto simplicibus, tarsis anticis ut in mare formatis, vidi in Mus. D. Hope, cum nomine *O. Dumolinii* inscriptam.

Sp. 7. *Orphnus MacLeay*, Laporte, (Ann. Soc. Ent. de France, vol. i. p. 405.)

“*O. fusco-nigricans*, capite anticè cornuto, thorace medio excavato, scutello posticè rotundato, elytris fusco-rubidis, valde punctatis, ad suturam stria impressis, corpore subtus pedibusque ferrugineis.

“Long. 4, larg. 2 lign.”

Habitat in Senegallia.

An idem cum præcedenti?

Sp. 8. *Orphnus Senegalensis*, Lap. (op. cit. p. 406.)

“*O. obscurè fuscus*, elytris irregulariter striatis, thoracis lateribus minus elevatis quam in præcedente.

“Long. 3, larg. 1½ lign.”

Habitat in Senegallia.

Insectum masculinum e Senegallia cum hoc nomine inscriptum in Mus. D. Hope hospitatur: colore castaneo, capite et margine

antico pronoti nigricantibus, lateribus excavationis pronoti conico-subelevatis et versus caput tuberculo utrinque armatis, tarsis simplicibus, elytris punctis versus suturam in striis irregularibus dispositis. Long. corp. lin. $3\frac{1}{2}$, (mensur. Angl.)

Fœminam hujus in Mus. D. Melly vidi simillimam, at capite in medio tuberculo minuto armato et pronoto anticè impresso. Long. corp. lin. $3\frac{1}{3}$. Habitat etiam in Senegallia.

Sp. 9. *Orphnus Verreauxii*, Reich. MSS. in Guér. Expl. Icon. R. An. p. 86.

E præcedentibus differt magnitudine majori (long. 14 mill. = 7 lin. mens. Angl.), capite cornu parvo elevato armato, pronoto excavatione transversa, tarsis anticis in ♂ ungue interno maximo depresso et bifido: in ♀ simplici.

Habitat Cap. Bon. Spei.

Sp. 10. *O. ? nitidulus*, Dufour. Dej. Cat. sine descr.

Habitat Senegallia.

DESCRIPTION OF THE PLATES.

Plate XI.

Fig. 1 a—1 f, details of *Hybosorus arator*.

1 a, clypeus, labrum and mandibles; 1 b, maxilla; 1 c, instrumenta labialia; 1 d, antenna; 1 e, terminal joints of antenna.

2, *Silphodes Philippinensis*; 2 a—2 k, details.

2 a, clypeus, labrum and mandibles; 2 b, mandible; 2 c, extremity of mandible seen sideways; 2 d, maxilla; 2 e, instrumenta labialia; 2 f, antenna; 2 g, anterior tibia and tarsus of the male; 2 h and 2 i, anterior ungues ♂ in different positions; 2 k, anterior tibia and tarsus of the female.

3 a—3 f, details of *Coilodes gibbus*.

3 a, labrum; 3 b, mandible; 3 c, maxilla; 3 d, instrumenta labialia; 3 e, anterior tibia; 3 f, ungues (in all the feet similar).

4, *Chatodus piceus*; 4 a—4 f, details.

4 a, clypeus, labrum and mandible; 4 b, mandible; 4 c, maxilla; 4 d, instrumenta labialia (one of the palpi removed); 4 e, antenna; 4 f, part of antenna of *Chatodus irregularis*.

5, *Apalonychus Waterhousii*; 5 a—5 g, details.

5 a, head and antenna; 5 b, mandible; 5 c, maxilla; 5 d, instrumenta labialia; 5 e, extremity of antenna; 5 f, anterior leg; 5 g, posterior tibia and tarsus.

6, *Anaides fossulatus*; 6 a—6 e, details.

6 a, head; 6 b, maxilla; 6 c, instrumenta labialia; 6 d, punctures of pronotum; 6 e, striation of elytra.

Plate XII.

Fig. 1, *Cryptogenius Miersianus*; 1 a—1 i, details.

1 a, underside of front of body, showing the mode in which the head folds into the anterior cavity of the prosternum; 1 b, underside of head; 1 c, mandible; 1 d, maxilla; 1 e, instrumenta labialia; 1 f, labial palpus removed; 1 g, antenna; 1 h, areolated punctures of the pronotum; 1 i, striation of elytra.

2 a—2 c, details of *Geobius Dorcas*.

2 a, mandible; 2 b, lobes of maxilla; 2 c, antenna.

3 a—3 e, details of *Ochodæus chrysomelinus*.

3 a, labrum; 3 b, 3 c, mandibles; 3 d, maxilla; 3 e, antenna.

4 a—4 e, details of *Triodontus nitidulus*.

4 a, labrum and mandible; 4 b, mandible; 4 c, maxilla; 4 d, instrumenta labialia; 4 e, antenna.

5 a—5 d, details of *Ægidium? Guianense*.

5 a, clypeus, labrum and mandible; 5 b, mandible; 5 c, maxilla; 5 d, instrumenta labialia.

6, *Ægidium parvulus*; 6 a—6 h, details.

6 a, front of head; 6 b, labrum; 6 c, mandible; 6 d, maxilla; 6 e, instrumenta labialia; 6 f, labium and labial palpus; 6 g, antenna; 6 h, part of antenna of *Æg. hædulus*.

7, *Ægidium Columbianum*, male; 7 a—7 b, details.

7 a, head and prothorax seen from the front; 7 b, the same seen laterally.

8, *Ægidium Columbianum*, female.

9, *Orphnus meleagris*; 9 a—9 i, details.

9 a, front of head; 9 b, mandible; 9 c, maxilla; 9 d, instrumenta labialia; 9 e, antenna; 9 f, head and prothorax seen sideways; 9 g, extremity of anterior tarsus and unguis; 9 h and 9 i, extremity of antennæ of *Orphnus picinus*.